



Take Test: Quiz 4.9

Test Information

Description

Instructions

Multiple Attempts This test allows multiple attempts.

Force Completion This test can be saved and resumed later.

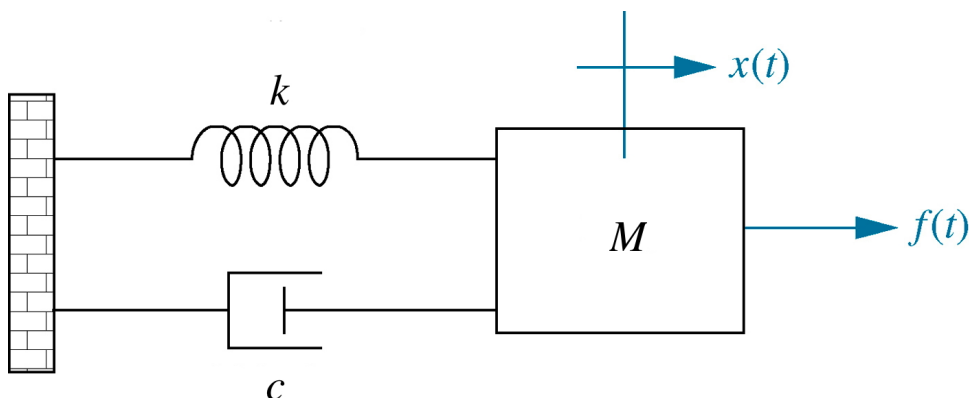
QUESTION 1

1 points

Saved

Consider a spring-mass-damper system with mass, damping, and spring parameters $m = 1, c = 2, k = 10$. The transfer function with output that is the position $x(t)$ of the mass, and input that is the applied force $f(t)$, is

$$G(s) = \frac{10}{s^2 + 2s + 10}.$$



Which of the following represents the settling time of the system's step response?

- ☐ $T_s = 3$ sec.
- ☒ $T_s = 4$ sec.
- ☐ $T_s = 1$ sec.
- ☐ $T_s = 4/3$ sec.

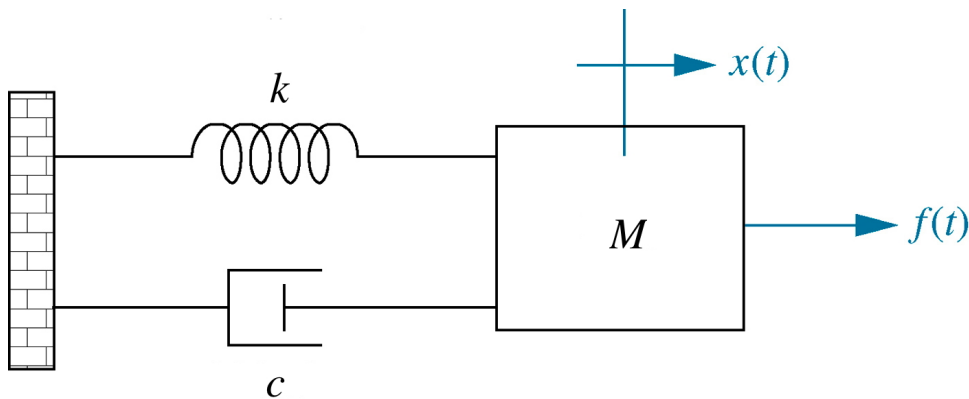
QUESTION 2

1 points

Saved

Consider the same spring-mass-damper system with transfer function

$$G(s) = \frac{10}{s^2 + 2s + 10}.$$



Which of the following represents the peak time?

- ☒ $T_p = \pi/3$ sec.
- ☐ $T_p = \pi$ sec.
- ☐ $T_p = \pi/10$ sec.
- ☐ $T_p = 4/3$ sec.

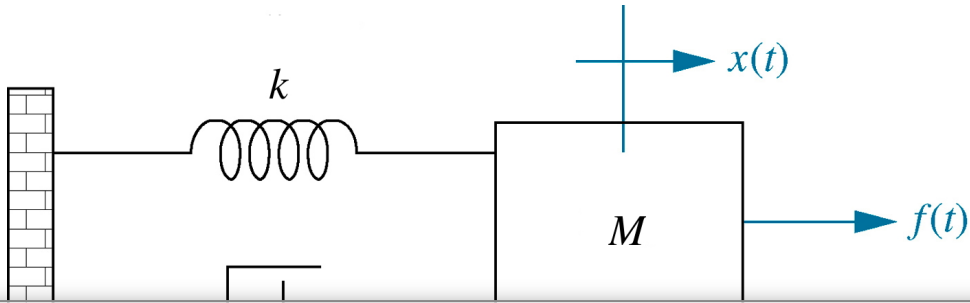
QUESTION 3

1 points

Saved

Consider the same spring-mass-damper system with transfer function

$$G(s) = \frac{10}{s^2 + 2s + 10}.$$



▼ Question Completion Status:

Which of the following represents the damping ratio and natural frequency?

- ☐ $\zeta = 1/3, \omega_n = \sqrt{10}$
- ☒ $\zeta = 1/\sqrt{10}, \omega_n = \sqrt{10}$
- ☐ $\zeta = 3/\sqrt{10}, \omega_n = 10$
- ☐ $\zeta = 1/\sqrt{10}, \omega_n = 3$

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers

Save and Submit